technical report

QUALIFICATION TEST REPORT

OF

".187" SERIES

ULTRA FAST FULLY INSULATED FASTON
RECEPTACLE TERMINALS for AWG 22-18 WIRE

AMP 108-1043

ELR 121-2

S-212

March 16, 1977
Unrestricted

Environmental Testing Department

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ENVIRONMENTAL TESTING DEPARTMENT

March 16, 1977

Qualification Test of Ultra Fast
"187" Series, AWG 22-18 Fully
Insulated FASTON Receptacle
Terminal: AMP Specification 108-1043:

INTRODUCTION:

Ultra Fast Fully Insulated FASTON Receptacle terminals were tested in the Environmental Laboratory to determine if they comply with the performance requirements of AMP Product Specification 108-1043.

SCOPE:

Ultra Fast Fully Insulated FASTON Receptacle terminals crimped to wire in accordance with the procedures of the Ultra Fast applicator log were subjected to the qualification test sequence listed in paragraph 3.5 of the specification.

CONCLUSION:

Ultra Fast Fully Insulated FASTON Receptacle terminals, when manufactured in accordance with AMP Drawing 350799 meet the performance requirements of AMP Product Specification 108-1043.

PRODUCT DESCRIPTION:

Ultra Fast Fully Insulated FASTON Receptacle terminals consist of a FASTON body enclosed in a fully insulated housing. They mate with FASTON tabs which are used on business and commercial equipment.

WIRE CHARACTERISTICS:

Stranded, tin plated wire, with 600 volt black insulation, conforming to UL 1015 and as described in AMP Specification 116-1142, was used for testing.

TEST SAMPLE and TOOLING IDENTIFICATION:

Quantity	Part Number	Description
185	2-350799-2	Receptacle
25	60443-1	.187 X .020 Tab
30	60920-2	.187 X .020 Tab

QUALIFICATION TEST SEQUENCE:

The test sequence of paragraph 3.5 contained in AMP Specification 108-1043 was followed as shown below:

Examination or Test Nomenclature	Requirement & Method Paragraph
TEST GROUP I	
Examination of Product	3.4
TEST GROUP II	
Secureness	3.4
Heating	3.4
Pullout	3.4
TEST GROUP III	
Engagement and Disengagement	3.4
TEST GROUP IV	
Dielectric Withstand, Test Condition A	3.4
TEST GROUP V	
Dielectric Withstand, Test Condition C	3.4
TEST GROUP VI	
Dielectric Withstand, Receptacle, Tab Entry Portion	3.4

SUMMARY OF TEST RESULTS:

TEST GROUP I - (Five samples tested)

Examination of product - 3.4

All receptacles selected for test were found to comply with the material, construction, physical dimensions, and workmanship requirements of the specification.

TEST GROUP II - (60 samples tested)

Secureness - 3.4

Twenty receptacles each, crimped to AWG #22, AWG #20 and AWG #18 wire were subjected to one hour of mechanical flexing under load in accordance with the specification. Loads used were 2.0 pounds for AWG #18 and 1.0 pounds for AWG #20 and #22 wire.

Summary of results

All receptacles tested were found to comply with the requirements of the specification. The joint between the receptacle and the wire remained intact.

Heating - 3.4

Twenty receptacles each, crimped to AWG #22, AWG #20 and AWG #18 wire, were subjected to a heating (temperature rise) test in accordance with the specification. Samples were stabilized at the specified current and temperature rise was measured and recorded. Specification maximum temperature rise is 20°C.

Summary of results

All receptacles tested were found to comply with the requirements of the specification. Maximum individual temperature rise values are as recorded below:

Wire	Current, amps	Maximum individual temp. rise
AWG #22	3.0	2.8°C
AWG #20	4.0	3.4°C
AWG #18	7.0	9.4°C

Pullout - 3.4

Twenty receptacles each, crimped to AWG #22, AWG #20 and AWG #18 wire, were subjected to a one minute direct pull in accordance with the specification. Specified load values are 10 pounds for AWG #22 wire, 16 pounds for AWG #20 wire and 20 pounds for AWG #18 wire.

Summary of results

All receptacles tested were found to comply with the requirements of the specification. The joint between the receptacle and the wire remained intact after one minute, at the specified load.

TEST GROUP III - (20 samples tested)

Engagement/Disengagement - 3.4

Receptacles and tabs were engaged and disengaged six times in accordance with the specification. Specification requirements are as tabulated below:

First engagement,	individual maximum	15 pounds
First disengagement,	individual maximum	20 pounds
	average minimum	5 pounds
	individual minimum	3 pounds
Sixth disengagement,	average minimum	3 pounds
	individual minimum	2 pounds

Summary of results

All receptacles tested were found to comply with the requirements of the specification. Applicable values are as tabulated below:

First engagement,	individual maximum	12.0 pounds
First disengagement,	individual maximum	14.5 pounds
	average minimum	10.23 pounds
	individual minimum	7.10 pounds
Sixth disengagement,	average minimum	10.27 pounds
	individual minimum	6.25 pounds

TEST GROUP IV - (60 samples tested)

Dielectric withstand test condition A - 3.4

Twenty receptacles each, crimped to AWG #22, AWG #20 and AWG #18 wire, were subjected to dielectric withstand test condition A for a duration of one minute in accordance with the specification. A 3400V AC potential was applied between the wire and a container of #12 lead shot in which the receptacle was embedded.

Summary of results

All receptacles were found to comply with the requirements of the specification. There was no breakdown or flashover noted.

TEST GROUP V - (20 samples tested)

Dielectric withstand test condition C - 3.4

Twenty receptacles were subjected to dielectric withstand test condition C for a duration of one minute in accordance with the specification. A 3000V AC potential was applied between the receptacle and a flat metal plate, as shown in figure 4 of the specification.

Summary of results

All receptacles tested were found to comply with the requirements of the specification. There was no breakdown or flashover noted.

TEST GROUP VI - (20 samples tested)

Dielectric withstand, receptacle, tab entry portion - 3.4

Twenty receptacles were subjected to dielectric withstand for a duration of one minute in accordance with the specification. A 1000V AC potential was applied between the receptacle and a flat metal plate, as shown in figure 5 of the specification.

Summary of results

All receptacles tested were found to comply with the requirements of the specification. There was no breakdown or flashover noted.

VALIDATION:

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TMS:dm

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